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ABSTRACT

The papers in this collection were presented at the second annual conference on the Teaching of Technical Writing at Southern Illinois University at Carbondale. Those from the general session, which are of a philosophical nature, discuss a flexible approach to teaching technical writing, the essentials of a technical writing course, how technical writing teachers can help students with learning disabilities, and technical writing as technical communication. Those from the workshop sessions consider either ways to teach technical writing or the interaction between industry, education, and technical writing. Papers concerned with teaching techniques discuss a "studio" method of instruction, the teaching of technical writing at community colleges, free writing for engineers, and engineering communication. Those on relations with industry discuss the variable meaning of "technical writer" and what qualities industry desires in a technical writer. A list of conference participants is appended. (RL)

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CONFERENCE ON THE TEACHING OF TECHNICAL WRITING

OCTOBER 20-21, 1978

TOUCH OF NATURE ENVIRONMENTAL CENTER

SOUTHERN ILLINOIS UNIVERSITY

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PREFACE

Since there have been two October conferences on technical writing and a third in the planning stages, perhaps an historical backward glance is appropriate. (Do jot down October 12-13, 1979, on your calendar.)

The spark that generated the initial enthusiasm for our activities was Paul Morrill's vision that we teachers of technical and business writing at SIU-C needed first to communicate with one another before we could begin to project course needs and define areas of overlapping and paucity.

This reflection, strengthened by the Department of Higher Education's willingness to fund a planning luncheon, brought together many of us who participated in the first year's program. We talked of many things, including an idea to meet together with others from area schools to discuss technical writing and problems that we have in common.

As the first workshop took shape, units of the University helped in diverse ways. The English Department has generously funded enrollment of graduate assistants for both conferences. From that department Dan Piper has been the official "goodwill ambassador" in generating interest for courses in technical writing. The School of Technical Careers underwrote the publishing of the first "Notes and Papers." Individual faculty members from the Rehabilitation Institute, Colleges of Business and Education participated on the program. Other units showed their support by sponsoring participation of interested faculty and staff.

The response from those outside SIU has been rewarding. Don Cunningham, well-known in tech writing circles, has been gracious in lending his professional expertise. David Fear, another well-known author in the field, joined us this year, encouraging us to extend our view of technical writing.

At the first meeting Don Bush was the lone representative from industry. In 1978 he brought along many of his colleagues from the St. Louis Chapter of the Society for Technical Communication. In fact, Bill Funderburk, the national president, was one of the speakers. We are in the process of getting a branch of that organization established on the SIU-C campus.

Lest this prologue exceed the length of the papers, suffice to say that we appreciate the opportunity to share professional concerns and commitments in this relaxed setting. We hope to involve more of you from other campuses in the planning. For this next year, Scott Kelner from Columbia College, Missouri, and John Chillson of Kaskaskia Community College are serving as advisors at large.

In the meantime, enjoy--

your students
your campus
your profession.

Vivienne Hertz, SIU-C

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General Opening Session (Friday afternoon): An Overview

Dan Piper

Professor of English

Coordinator of the Freshman Composition Technical Writing Program, SIU-C

As one of the three planners and coordinators of the second SIU-C conference on the improvement of technical writing in the classroom and on the job, I would like to start by telling you how we organized this year's program, and what we have learned from it. Instead of having only two sessions focussing on two general topics as we did last year, we decided instead to have only one general session on topics of a more philosophical nature, followed by two optional parallel workshops on practical subjects: relations with industry, and specific classroom teaching problems and strategies.

In choosing speakers for these sessions, we wanted to bring in fewer SIU-C speakers than last year and to encourage greater participation by conferees. We were encouraged by the number of former participants who volunteered to give papers this year and have a gratifying reservoir of volunteers for the program next year.

It is an old saying that one of the best ways to learn about a subject, besides teaching it, is to write a book about it. So we were especially pleased that for the opening session we could have the authors of popular technical writing textbooks, David Fear (Technical Writing, 2nd ed., Random House 1978; Technical Communication, Scott, Foresman, 1977) and Don Cunningham (How to Write for the World of Work, Holt, Rinehart and Winston, 1978; The Practical Craft: Readings for Business and Technical Writers, Houghton Mifflin, 1978; Ed., The Technical Writing Teacher). (It was only coincidental that both Dave and Don had previous connections with SIU-C as alumni and/or teachers of English!)

Although both Dave and Don addressed themselves to the same topics, the interesting point is how little they overlapped, reminding us of the many-faceted nature of technical writing. One of the problems we have already encountered in our previous sessions has been the divided opinion concerning whether the problems of teaching technical writing in two-year and four-year institutions are greatly different, and whether they require different textbooks, classroom strategies, etc. Here it is interesting to note the difference in opinion on this subject between David Fear's comments and John Chillson's paper (in the Saturday morning classroom strategies workshop). Clearly we will want to explore this issue further at future meetings.

Last year's participants who responded to our questionnaire of the past summer concerning future topics of interest, came down strongly for a discussion of the ways in which the psychologist might help us understand the teaching of writing better. (It is interesting that the Alfred P. Sloan Foundation, usually concerned with the teaching of science and engineering, has just funded a group of cognitive psychologists at the University of Toronto to study the student's writing development from grade school through high school, on the grounds that such information is essential if we are to teach students to become more effective writers.)

One of the advantages of a big school like SIU-C, with 23,000 students and 4000 freshmen taking freshmen composition each year, is that we have large samples to analyze in questions of this kind. We are lucky that our Basic Skills Remedial Center, although staffed by English instructors in its writing programs, can call on experts like Barbara Cordoni in the Department of Special Education when it encounters extraordinary student writing difficulties. Barbara's special concern is dyslexia. We may come across only an occasional dyslexically handicapped student in a freshman composition class of 25. But if we are teaching 4000 freshmen, we may encounter more than 200 students each year with problems of this kind (of varying severity).

Barbara Cordoni reminded us that when we encounter students with possible recurring dyslectic patterns we should not merely write them off as lazy or stupid (as too many of us have in the past) but be patient and try to direct them to the special help they need--at least to one's administrative supervisors for appropriate attention. She cautions us to remember that most of us as English instructors are not properly trained to provide effective therapy. Dyslectic symptoms, although they can show up in penmanship, the writing of arithmetical symbols, and often in speech, are usually spotted first in student's written work. We need to be extra-sensitive to such problems.

Recently a group of us at SIU-C decided to form a branch group of the Society for Technical Communication, the international organization of people from industry and education interested in all aspects of communication: written, oral, visual. We have enjoyed our visits to the monthly meetings of the St. Louis Chapter. And we have come to realize why this group is so admired as one of the most dynamic and influential chapters in STC. Much of this leadership has been due to people like William Funderburk, Director of Publications at Emerson Electric and Don Bush, head of the technical writing and training programs for the McDonnell-Douglass Aircraft Company. It was an especially nice coincidence that Bill Funderburk, former chairman of the St. Louis Chapter, should have been elected international president of STC this year when we needed someone to tell us more about the society's activities.

This year's annual STC convention is being held 16-19 May in Los Angeles; the program covers a wide range of topics of interest to many of us. Some of us are planning to attend and to take part in the discussion.

A FLEXIBLE APPROACH TO TEACHING TECHNICAL WRITING

David E. Fear
Valencia Community College

The three topics suggested to me by Dan Piper, "The Role of a Textbook as Seen by a Textbook Writer," "Teaching Technical Writing to 2 yr. vs. 4 yr. Students," and "The Humanistic Satisfaction of Teaching Technical Writing," sound at first glance to be totally incompatible for the same presentation; but close examination reveals a common thread by which I hope to bind them together into a unified, coherent presentation.

If we view the technical writing process as consisting of three distinct phases--pre-writing, composing, and revising--we can note that the second phase, the actual writing, receives most of our attention, with revising sometimes stressed a bit, and planning occasionally paid a bargain basement dosage of lip service. If we begin by examining and questioning these relative emphases we can perhaps uncover some real humanistic satisfactions for the instructor, as well as determine the best mode of using the textbook, and finally can learn that the technical writing course for two-year terminal students can, and probably should, be much the same as that for underclassmen in the four-year school. We might also find that the condemnations heaped upon technical writing by some of our more effete colleagues within the typical English department are more easily parried than we generally realize.

The study of technical writing should originate at the same place all study of communication should--with the basic communication model. We must constantly remind ourselves as well as our students that a given piece of communication is effective only as it has the desired effect on the intended reader or listener; and that, of course, readers read what they read and listeners hear what they hear--not what we write or say.

Further consideration of the basic notions of Hayakawa, for instance, should lead unquestionably to the conclusion that the preliminary planning of a piece of writing is at least as important as the execution. In fact, the right kind of preliminary analysis will often result in documents that almost write themselves. Preliminary questions that must be answered include the obvious such as "Who is the reader?" Often overlooked though is the equally important corollary "What is he going to do with it?" Does the reader need a general understanding so that he can consider himself informed on what we are doing and can answer inquiries from others about the nature of our work? Or does he need a working knowledge so that he can trouble-shoot our work or perhaps even take it over? Failing to answer these questions can bring obviously serious consequences.

Equally serious is the question "What effect do I want it to have on him?" The answer will usually be something such as "To give him a clear, thorough understanding so that he can weigh the information objectively." But not always. Both our critics and many of us mistakenly assume that all on-the-job writing must be objective, designed solely to convey strictly factual information as clearly and concisely as possible. In reality, a good deal of it is promotional. Proposals are rarely totally objective; albeit they had better be based on factual information. Progress reports are nearly always slanted to show that we are making suitable progress but not so much as to raise expectations unrealistically. And so on for almost everything we teach our students to write.

A related, and equally important, concern is the fact that the readers for whom our students will write do not always share our notion of good writing. We can rail against technical jargon, for instance, convincing our students that they must assiduously avoid it. But once on the job they may find that jargon is tolerated, even expected. Perhaps the boss simply does not know any better; or perhaps experience has taught him that many people do respond positively to even the most obscure, pretentious technical jargon.

No, we should not teach our students to write obscurely or pretentiously, but if we are going to help them to survive, or perhaps even to thrive a bit, then we cannot blindly condition them to use one standard diction, one standard organizational pattern, or for that matter, one standard anything. We must help them to learn how to analyze a reader and a situation; then we must help them to develop the tools to utilize the results of that analysis.

Once again we return to semantics, and once again, Hayakawa will do nicely. We must teach our students the nature of evidence, the difference between fact and inference and between factual language and judgemental language. But we must not continue to blithely point out that judgemental language is reserved for other types of writing and that the technical writer must never use it.

Connotation, euphemisms, and other common aspects of diction must be treated in the same manner. Students definitely need to learn to distinguish between highly-charged words and those with relatively neutral connotations. But they must not be taught that highly connotative words are innately sinful. Euphemisms might have no place in the typical technical report, but they are very useful in certain other pieces of writing.

When we consider technical jargon we must differentiate among several varieties. We can first help our students to identify the all-purpose jargon or gobbledygook that appears in the writing of many professionals from all disciplines, technical and non-technical. Marked by sesquipedalianisms, pomposities, and redundancies, not to mention vacuities, such

language is generally the product of very muddled thinking and only slightly less frequently is intended to confuse or obscure. Institutions as diverse as the N.C.T.E.'s double-speak committee and the Washington Star (through its Memos of the Month) have struggled valiantly against it.

A second and much less insidious variety of jargon is that written by many scientists and engineers. This form is marked by unnecessarily technical language and by huge masses of relevant but often confusing bits of data.

Finally is shoptalk--comprised of miscellaneous technical terms, nicknames, and abbreviations. In our zeal to help our students to avoid the first two varieties, we often overlook the utility of the shoptalk in internal communication. Shoptalk functions much like a shorthand or a code, enabling its user to communicate more information more concisely.

Another sometimes erroneous assumption that we make about our students' future writing needs is that argumentation and persuasion are irrelevant. If we do admit the validity of studying argumentation, we generally accept only the most objective, intellectual approach. Yet our students will frequently have to use more subjective, emotional appeals. Students should learn to differentiate between the two approaches and to distinguish either from propaganda or just plain illogical thinking.

Once students have a working understanding of situational analysis and have learned enough about language and rhetoric to use the product of their analyses, they need practice at it. Some sort of planning worksheet can be very helpful here. Require the students to answer the right preliminary questions before they begin composing. The exact structure of the worksheet and the specific procedures used in approving them are less important than the fact that some worksheet be completed and some control mechanism be used to check it.

Next, have students do at least one or two assignments that require composing two different versions of the same basic piece of writing, aimed at two carefully defined readers. Instructions and process analysis would do nicely. One reader, for instance, could be a layperson, perhaps a brand new trainee; the second could be a colleague who had never operated the machine or done the process in question but who had done similar operations.

Dual purpose assignments such as these can also help us resolve a long-standing dilemma of the technical writing teacher: whether to emphasize the common rhetorical skills or the standard formats of technical writing. Careful selection of typical letters and reports can do both. The claim letter, for instance, makes an excellent assignment--for several reasons. It can help students to learn overall letter-writing techniques and letter forms. It can help them

learn to write a letter that nearly all of us in late twentieth century America have to write with some regularity. It poses to them certain rhetorical problems they will have to face in many different situations. Anyone who can learn to size-up the situation and develop an appeal that will get his refund or his merchandise can learn to cope with most other writing situations.

One other multi-purpose assignment deserves mention--the abstract. Since abstracts are important parts of formal reports, proposals, and articles, students certainly must learn to write them. Furthermore, they also offer excellent practice in writing concisely--both in selecting only the most important information, and in expressing it as economically as possible. In fact, one could probably justify spending several weeks helping students develop several each of informational and descriptive abstracts.

Pulling together some of the diverse notions suggested thus far, we can perhaps determine the proper role for a textbook in a technical writing course.

The textbook should offer models of good writing, but these models must not be slavishly copied in the form-letter fashion favored by many unimaginative, uninspired students. If we accept the contention that every writing situation and every reader are different, then we will immediately recognize that a model can do no more than to furnish a base or to suggest some possibilities. Having two or three models of a certain type would obviously broaden the possibilities, but no reasonable number of models would relieve students of the necessity to design their own pieces of communication to fit their own unique situations.

The textbook should also define terms and give general guidelines for writing in the various modes and formats, but should again serve primarily as a base from which instructors can help students to develop unique pieces of writing. If the text offers clear, thorough explanations of the basics, the instructor can concentrate on motivation, on presenting supplementary information, and on functioning as an editor in laboratory situations. The supplementary information can include subtleties for more sophisticated students, detailed explanations of the basics for weaker students, and broader applications for students in various disciplines.

Finally, the text can provide a reference source for students--furnishing quick basic answers to questions of rhetoric or format, and perhaps of basic grammatical or mechanical problems.

Essentially, though, the textbook must be the servant--freeing the instructor to give specialized information enriching his course, and to work individually on student problems.

By now it should be obvious that the kind of course envisioned here would vary little whether it were offered to two-year college students or to freshmen and sophomores in a four-year school. Granted, differences between the two groups often do exist, both in the skills they bring to the course and in their future job-related writing expectations. But the similarities are greater; and, most importantly, differences among the members of either group are greater than those between the two wholes.

Assuming that at least one term of composition is pre-required and that writing laboratories or developmental courses are available for students with serious grammatical or mechanical deficiencies, the course in question should work in either institution. Both groups of students will need work on writing clearly, concisely, and coherently. Both will need help like that described above in situational analysis. The one area in which variation might be desirable is in applications. University students aspiring to higher-level positions might need eventually to write more sophisticated reports and articles than would their two-year colleagues. Unfortunately, as first or even second-year students, few will have the technical expertise to prepare such documents now. In fact, many two-year college students will possess greater technical expertise, being older and more experienced in their fields.

If the textbook is used as a primary information source as outlined above, the instructor can use a modified laboratory approach to help those students who are able to work on sophisticated applications. The bulk of the class can work on a core list of assignments, with others substituting more sophisticated assignments developed with help from the instructor. There is little reason why as much as one-third or more of the class time cannot be devoted to this in-class writing, with the instructor serving as editor and facilitator. Students would, of course, also need to devote a great deal of time out of class completing these projects.

The instructor in the two-year college--or four-year, for that matter--that does not prerequisite a composition course for technical writing and does not have an effective writing laboratory or remedial program does face special problems. He simply cannot offer the kind of course referred to above. He must spend so much of his energy and his class time working on basic grammar, mechanics, and the most elementary concepts of rhetoric that he has little time left for technical writing. Perhaps the best thing he can do to improve his technical writing course is to lobby his administration to institute the needed basic courses.

At the other extreme is the technical writing course taken by junior and senior university students. These students do have the technical expertise to write sophisticated reports and articles, and they should be made to do so. Nonetheless, experience indicates that these students do need copious dosages of reader analysis and basic rhetoric.

Whichever of these situations he faces, the technical writing instructor does have several distinct advantages over his counterpart teaching conventional composition courses. He can more easily motivate his students by showing them that the skills he teaches are directly applicable in real life. By working closely with faculty in the technical programs, he can often design assignments that help students directly in their major field courses.

Most importantly, he is working directly with writers actually struggling to find the right word, phrase, or organizational pattern. And, he is generally working with writers who have something to say and who care about their subjects.

To those members of the College English establishment who condemn us and our subject, we need reply only: "Read Poe's 'Philosophy of Composition.'" The process of composition described by Poe is certainly very similar to that advocated earlier in this paper. To charges that technical writing uses pat formats, we can respond, "So does neo-classical poetry." To complaints that we rely on a pat, artificial diction we can make the same reply. An enlightened technical writer is every bit as creative as the typical poet or novelist.

No, our technical writing students are not poets. But with our help they do become serious writers, students of the language who explore its possibilities and use it to communicate useful information.

I am certainly not ashamed of being a technical writing teacher rather than a literature teacher. In fact, I rather enjoy it. And surprisingly, I do not feel contaminated. I still enjoy teaching my occasional section of British Literature I and I still read Robert Coover and John Hawkes. But I'll never give up the experience of helping a young respiratory therapist communicate some new applications of the Bird II respirator to his peers or helping a budding young landscape designer learn to prepare proposals for his would-be corporate clients.

WHAT ARE THE ESSENTIALS IN A TECHNICAL WRITING COURSE?

Donald H. Cunningham
Professor of English
Morehead State University
Morehead, Kentucky

When teachers of technical writing get together for any purpose, they are not together long before they begin exchanging ideas about what should be taught in the basic technical writing course. This afternoon I want to give you my version of the basic targets in such a course.

But before I do, I would like to mention a topic I won't talk about, but which I believe is emerging as an important topic for our future examination and discussion. As we teachers come to agree more and more on what ought to be taught in the course, we will begin turning to the emerging topic of how to teach what we teach. As we learn more about learning, cognition, and creativity from such psychologists and educationists as Erich Fromm, Rollo May, Carl R. Rogers, Abraham H. Maslow, and Jerome S. Bruner, we will begin to examine more closely the implications of their findings to our presentations in the classroom. Perhaps if I am invited back to participate in SIU's third annual conference on the Teaching of Technical Writing, I will have the opportunity to demonstrate some teaching techniques.

Now to return to my topic for today--the essentials that writers should learn in a technical writing course. By "essentials" I refer to the solutions to writing problems that almost any one of us has confronted in teaching our students to write, in studying examples of technical writing, or in working as a writer or editor in industry or business. By "writer" I refer to the subject-matter expert, who is trained professionally as a technician, engineer, or business person, and who usually writes the first draft of material that technical writers or editors work with. Unfortunately for the technical writers and editors, the subject-matter expert seldom is trained to write.

The subject-matter expert's deficiencies as a writer are easy to catalog:

- He or she cannot write a good narrative description relating in clear English what needs to be conveyed.
- He or she lacks empathy with readers and simply cannot write for the needs of others.
- He or she produces, consequently, ambiguities, inconsistencies, and information gaps.

There are exceptions, of course; but most subject-matter experts have few writing skills, and, perhaps, do not really care about the actual written product. After all, they are trained as subject-matter experts and are paid to work as subject-matter experts. More importantly, once they are in the world of work, the subject-matter experts have little time to devote to learning how to become writers--even if they wanted to.

One solution to this collection of deficiencies is to teach a few essential principles of writing to the subject-matter experts while they are still students. The essentials are these:

1. How to organize information and reveal the organization to the readers.
2. How to write in plain English--regardless of the situation or audience.
3. How to make graphics an equal partner with words.
4. How to establish sensible usage criteria.

Teaching Organization

The highest priority goes to organization. We need to teach our students how to organize information so readers can understand it easily. Part of this consists of teaching how to reveal organization. Far too much technical writing is not organized into logical or psychological hierarchies that enable readers to get the big picture, to follow the details without getting overwhelmed and lost, and to come out at the end remembering something.

The big problem, of course, is that the writer always believes that his or her material is organized. However, if the organization is clear to the writer but not easily perceived by readers, the readers will regard the information as unorganized, perhaps even incoherent.

Take, for example, this bit of information: 6067848461. It has meaning, significance, and is designed to be used. But to most readers, the information looks like a random list of numbers. Once the organization of the information is revealed--(606)784-8461--readers see immediately the meaning of the information: it is a telephone number that is remarkably easy to remember. Without the organization revealed, the information is remarkably difficult even to remember!

Here's another example: a flowchart that describes the

annual business planning cycle for a large corporation that utilizes the management-by-objectives approach to plan its year's work. Believe it or not, this chart is organized and tells the story of MBO planning. However, it's intimidating to most readers. To the writer, it's all there and it's all clear. To readers, it's a frightening maze with 44 boxes. The solution here is fairly simple--it's a matter of grouping these 44 boxes under 4 or 5 major stages, so that readers can regard the process as having 4 or 5 major stages, not 44.

I am sure that I could go around the room and have each of you provide a similar example of this kind of "organized" material. Let me end this part of my discussion by reminding you that the origin of organization is the Latin organum, which means "implement," "instrument," or "organ." It is helpful it seems to me to remind our students that the organization of information is in actuality something that implements or is instrumental in the readers' learning the information contained in the piece of writing. I believe that once our students begin to look at organization in this way, the matter begins to take on new meaning for them.

Teaching Plain English

We must teach our students how to write clearly and concisely by cutting down on abstract words and the jargonistic use of initialisms and acronyms. Gerry Cohen, a publication analyst with IBM in Atlanta, once pointed out something that all writers should keep in mind: there is one variety of English that is suitable for all applications and all situations, PLAIN ENGLISH. No textbook author has invented a better medium for the communication of thought in our language.

The first step toward plain English is to avoid the overuse of abstract words. We often teach our students to substitute smaller words for longer words, but that is not the solution here. Some of the most overused abstract words are short words--effort, field, area, facility, one, function, etc. A related concern here is the overuse of passive voice verbs with all the little bitty is's, was's, were's, been's, have's, and make's that tag along necessarily with such constructions.

The problem with abstract words is not their length. The problem is that they don't create any mental pictures in the minds of readers. The solution is not to substitute shorter words, but to get rid of abstract words completely. They should be booted back up into the ethereal realm from whence they descended.

The second step toward plain English is to get rid of the jargonistic use of initialisms and acronyms. I once

wrote for a large company whose documents were infested with initialisms and acronyms. My supervisor informed me that their use was appropriate and the reason I was having difficulty with them was that I had not worked for the company very long. She assured me that after awhile I would get the hang of things and the constructions would not bother me. It wasn't long, however, until I realized that everybody around me had notebooks running to over 30 pages of definitions of all the initialisms and acronyms. When I asked why they kept these, they explained that there were so many that there was no way for them to remember them all. Still later, while working on a manuscript I came upon a marginal notation made by the subject-matter expert's supervisor. The supervisor wanted to know what a particular acronym referred to. The supervisor's question is especially interesting in light of what the subject-matter expert often believes to be the kind of language his or her supervisor wants.

Teaching Graphics

We need to teach our students to think more about communicating and less about writing. Certain concepts are simply easier to understand if they are conveyed visually. Recent studies in the hemisphericity of the human brain gives us clues about why visuals are important in learning. Understanding spatial relationships, for example, is essentially a right-hemisphere activity. To rely on verbal language, which is a left-hemisphere activity, to convey spatial relationships and certain gestalt concepts is to force verbal language to do something it is not very good at doing. In addition, tables and charts are tremendous word savers and allow for easy point-by-point comparisons that traditional sentence and paragraph structures cannot.

Our students need to be weened away from the concept of the classical essay form. But they must also come to realize that graphics by themselves can be as bad as words by themselves. Nothing is clear in itself. We need to teach them how to make graphics an equal partner with words.

Teaching Sensible Usage Criteria

There is a real dilemma here for us English teachers. As students of the language, we have developed a long-standing love affair with language, and we are likely to suffer extreme shock when we confront certain usage in business and industry. What each of us has developed is our own set of linguistic table manners, and we try to impose ours on others. We cannot do this. We should not do this.

Some expressions can be changed--but don't be surprised

at the amazing stories you will hear about why it is sometimes "correct" to spell all right as one word. You will also hear very interesting stories about how commas and semi-colons can be used. We can demonstrate that a preposition is a word we can end a sentence with. We can point out how further and farther are nearly as different as stationary and stationery. We can wage war against cutsey-poo expressions and overuse of capitalization. We can point out that none, no one, everyone, etc., can be seen to refer to one individual.

But some usage we'll have to learn to live with because the developing rhetoric and usage in technical writing or local practices make as good sense (sometimes better) as the dictates of our academic handbooks. We will have to learn to bend a little in some areas. Last February I read a paper on this subject at the Southeastern Conference on English in the Two-Year College held in Nashville. Perhaps someday that paper will see the light of day through publication. For now, I simply suggest that the usage handbook that does the job for technical writing does not exist.

Conclusion

These, then, are what I regard as the necessary emphases in a technical writing course--organization, plain English, graphics and words as equal partners, and sensible usage criteria. I feel sure that if we teach our students how to organize, use plain English, use graphics, and develop some sense in establishing usage standards, we will do much toward preventing the current deficiencies that I see in technical communication.

WHAT PSYCHOLOGY AND SPECIAL EDUCATION

HAVE TO SHARE WITH TEACHERS OF WRITING

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You who have gathered for this conference do not have to be told that: "Writing is a highly complex process and, according to Myklebust, is one of the highest forms of language, hence, the last to be learned. It is a form of expressive language, a visual symbol system for conveying thoughts, feelings, and ideas. Normally, the child first learns to comprehend and use the spoken word and later to read and express ideas through the written word. Although oral and written expression are not identical, it can be assumed that the visual symbol systems (reading and writing) are learned by superimposing them on auditory language. 'Man has not always written, nor is writing the earliest phase of language development. When children write they are responding to an innate urge which has moved mankind in dynamic ways through the ages--it was the primeval urge to record human experience and preserve the story of man's adventures that gave impetus to the development of writing' (Zirbes: 1955, 2). Relatively little research has been done on written language, but the role of this form of verbal behavior in a world of mass communication is alerting educators of their responsibility to shift emphasis from skills to a dynamic language process because the ability to use written language requires many integrities, including adequate auditory language and experience on which to base the written form (Johnson and Myklebust: 1967, 193)."

The lack of those integrities is the area of concern which I wish to investigate with you today. Developmentally the human organism develops cephalo-caudally and proprioceptively, that is: beginning with the lifting of the head, the chest and so forth until mobility is achieved, and pro-prioceptively--literally from inside out. First the infant waves and kicks, using both arms and both legs, there is little or no control of those limbs at this early stage. As months pass, the infant learns to control one shoulder at a time, one wrist and finally the hand. He still has little finger control. This simplistic example of stages is important because of what it precedes.

Although educators have known for 40 years that writing is the last developmental skill acquired, it is often the first academic area we teach. Heaven help the kindergarten teacher who tries to teach her small charges to read, but virtually all of them teach writing--of the alphabet, the children's names, phone numbers and addresses. Yet when de Hirsch studied 37 possible predictors of success at 2nd grade level among kindergarten children, she found that IQ ranked 13. What was the best predictor? Pencil grip--a developmental stage. What does that matter to you? You teach adults, but I'll bet that many of you have students who not only still print but print atrociously.

There is some evidence which indicates that if a skill is taught too early, before the individual is developmentally capable of that

skill, his ability to ever learn that skill is diminished. Within your student groups, you are likely to find some of these students. (At this point participants will be asked to write their name taking a full two minutes to write it once. The result will resemble approximately the way they wrote in the 3rd grade, thus demonstrating that early motor patterns stay with us all our lives.) One of my students, with a Ph.D. in language, came back to school to earn a Ph.D. in Special Education as well. Last year, after hearing lectures on disorders of written language, she told me how terrible she now felt about one of her former students. He was, she said, apparently very bright for he excelled in oral reports and clarity of thought. Therefore, she was aghast at receiving his first term paper which was replete with misspellings, disordered syntax, and mixed punctuation. Angered at what appeared to be a total lack of regard of conventional writing and of concern for one's work, she wrote unpleasant comments about his carelessness, the speed with which it must have been done, and so forth all over his paper. Now she felt that she had been very wrong, and should have looked deeper into the serious discrepancy between this young man's oral and written work, but she had not, and now it was too late. It was not a pleasant feeling.

I am here today because I hope that through sharing some of the knowledge of my discipline with you, you will not need to share her feelings.

Although I have been an English teacher, my specialty now is in the psychology of learning disabilities. Learning disabilities is basically a dysfunctioning of one or more processes in an individual's learning pattern. These specific difficulties in processing information may occur within a single learning system or through any combination of systems (auditory, visual, motor); at the perceptual, conceptual and/or expressive level; in quantitative thinking; in one or more of the various aspects of memory; in verbal and/or non-verbal skills; in attentional behaviors.

The consequence of these deficiencies and inconsistencies in processing information is a discrepancy between an individual's expected and actual achievement in the academic subjects such as reading, mathematics, composition, spelling, oral recitation and/or non-academic areas such as physical education, space and time judgements, listening, and personal relationships.

A specific learning disability is to be differentiated from a difficulty in learning resulting from mental retardation, severe emotional disturbance, bilingual-bicultural difference, experiential deprivation, sensory impairments, or orthopedic conditions, although specific learning disabilities may occur in combination with one or more of these disabilities (Learning Disabilities Manual: 1978, 12).

However, when I graduated from college, certified to teach English, French, and speech, I had never even heard the term learning disabilities. Therefore, when I encountered poorly written papers, misspelled words and so forth, I believed just as did my student, that I was dealing

strictly with the results of low intellectual ability, carelessness or simply poor teaching in the lower grades. Probably, in most cases, one or more of those conditions was correct--but there were always the few who didn't "make sense," who seemed to show instances of intellectual ability far beyond what their written work would indicate. I never understood those.

"Certain learning disabilities occur only in the written form; other forms of verbal behavior are intact. The disturbances observed most frequently are of three main types: (1) A disorder in visual-motor integration; the person can speak and read but cannot execute the motor patterns for writing letters, numbers, or words. He may be able to spell orally but cannot express ideas by means of visual symbols because he cannot write. This condition is designated dysgraphia. (2) A deficit in revisualization; this individual recognizes words when he sees them and hence can read. However, he cannot revisualize letters or words, so he cannot write spontaneously nor from dictation. He cannot evoke the visual image from hearing the spoken form. (3) A deficiency in formulation and syntax; in this instance the person can communicate orally, can copy, can revisualize and spell words correctly, but he cannot organize his thoughts into their proper form for written communication. He does not write the way he speaks; he makes errors in written formulation that he does not make in speaking" (Johnson & Myklebust: 1967, 199).

Those are terms we use to define specific types of writing problems. "Terrific," you may think, "I thought I had students with writing problems now it sounds as though they have some sort of Greek disease." So let's get away from terms and talk about specific patterns you may see in your student's work.

Spelling is a good place to start. Basically there are 2 methods for spelling: the first is a phonetic approach, wherein the letters are sounded and written in proper sequence. If an individual is good at this skill, there are still words he must learn to memorize because there are many words in English orthography which do not lend themselves to phonetic analysis. There are also many different and multiple sounds for many letters, so choosing the proper one may be a matter of guesswork. If you can "read" what the student is saying, even though the words are misspelled, your student is spelling phonetically and is not relying on visual memory for sequencing of the proper letters.

The second spelling pattern is called "bizarre," because the words do not necessarily bear a resemblance to what they are supposed to be. This pattern is found in those who try to remember how words are spelled visually, with no attempt at phonetic analysis. Their work is difficult to decipher precisely because it is "bizarre" and not phonetic. Some students will avoid using words they know they cannot spell and so lower the quality of their written work. When told to write creatively and not be concerned with spelling or punctuation, but with the idea of what is being written about, the beauty of their work is often striking. Creative writing is not the vehicle for correcting spelling, unless we want to stifle creativity.

Another form of this same problem area is the student who uses a word which is close to the correct word but the wrong choice, such as the use of the word 'wish' for 'witch.' Often, students who do this cannot hear the difference between those words. This is not necessarily a geographic or cultural factor, although in some cases it may be; usually such difficulties arise because of an inability to differentiate between sounds. There is no hearing loss per se. It is a problem in discrimination. The student with this difficulty will usually use the same words over and over, there is a marked paucity of vocabulary. "Their written language tends to be concrete and rarely above the level of the spoken," (Johnson & Myklebust: 1967, 195). A clue for you will be that these students can copy with no trouble.

The ability to copy is what differentiates the true dysgraphic student from other disorders of writing, for he can neither copy, write spontaneously nor from dictation without error. His is a problem of integration, in which there is an inability to transduce from what he sees to its written form. He knows what he wants to write and is usually verbally talented but he cannot get it down on paper. A way of helping this student is simply to teach him to say what he wants to write into a tape recorder and have someone else type or write it from the tape. This way we will discover how well he actually expresses himself and his clarity of thought instead of how well his visual-motor integration is working, for these students usually develop excellent verbal skills.

The problem of revisualization is different. This student can speak, read and copy, but he cannot revisualize words or letters. They cannot "see" them. They usually know when something is incorrectly written but do not know how to correct it. Perhaps an illustration will make this distinction clearer. For instance, when you want to write a word and you are unsure of its spelling, what sort of technique do you utilize? My daughter says she "sees" the words in her mind and simply reads off the letters. I cannot "see" a word in my head, I must write it down to check on spelling--I remember by the motor pattern. Some "sound out" the word. These are our coping mechanisms, but people with these learning problems difficulties do not have those coping mechanisms so they cannot adequately perform in written work.

The third major disorder is that of formulation and syntax. Again, the astute teacher will notice the discrepancy between oral and written work. Written work will show one or both of two patterns of difficulty. The first is that of what Johnson and Myklebust call "ideation and productivity." This condition is marked by the use of concrete language and limited output. One of the students with whom I am working illustrated this beautifully not long ago. She was given an assignment by her writing instructor to write a paper about her first day at SIU-C. The teacher wanted something such as "the day was hot and the air was stuffy as I stood with my registration cards in my hands waiting for the computer to type out my fate." What she got was: "I got up. I took a shower, then I ate breakfast. Then I went to register. Then I stood in a long line. Then I got my cards." etc.

Errors in the written form of language characterize the other major disorder in this area. Although some people show this disorder orally as well, most express this pattern only in their written work. The most common errors are in "word omissions, disordered word order, incorrect verb and pronoun usage, incorrect word endings and lack of punctuation," according to Johnson and Myklebust, 1967, p. 229. I would add that in the college population with whom I work, I note a preponderance of syllabication problems, wherein a syllable appears in the wrong place within the word. Teachers report that these students do very well on tests of multiple choice or fill in the blanks but fail miserably on essay type questions.

It must be immediately obvious to you that all of the types of problems in writing which I have noted can be present in students who have no psychoneurological learning disability. These types of problems are noted in the culturally deprived, the retarded, bicultural children, and so forth. The difference which I ask you to note is that those with learning disabilities show a particular pattern in writing which does not appear in their oral work. Therefore, it is quite possible for the astute teacher to differentiate between the student who has not been taught or who has been deprived in some way, from the student who is experiencing a written language disorder. There is a difference.

Unfortunately, unless the teacher is aware of these differences, the student is usually presumed to be stupid or careless, lazy or the product of a less than "adequate" language culture. The tragedy which occurs as the result of this unfair, and uncorrect "labelling" can be devastating.

Not long ago I was chatting at a convention about my research project. Standing on the periphery of the group stood a faculty member at a University whom I did not know. Soon I began to gather my things to leave. This unknown gentleman slowly approached me and in sotto voce said: "I'm trying very hard to read your name tag but I cannot, because I have a learning disability. I can neither write nor spell." We talked for a long time and he told me of some of his experiences and of the devastation he had felt. He told me of the night when he and a friend had gotten very drunk and how he had confessed to this friend that he had a learning disability. After that evening, he was so ashamed that it was two weeks before he spoke to the friend again. What is so terrible about this situation is that this faculty member, an obviously successful, bright man, had had to get very drunk in order to tell his best friend of his disability. His reaction in telling was as if he were confessing to some horrible crime. Along the way, we teachers have conditioned these people so that they imately feel that there is something terribly wrong with them. Sometimes we need to be reminded of the tremendous power we hold in terms of selfconcept over those we try to teach. It is an awesome responsibility. I asked this man how he managed to get as many federal grants as he does. His answer was simple; he dictates most of his work and he has trained an excellent secretary to decipher his written work.

You see, although 25% of these people fall within the gifted range of measured intelligence, what we are actually saying is that they lack good secretarial skills. Yet, we have the power to deny them a chance at college educations only because they process material in different ways from the norm.

Language, oral and written, is generally assumed to be a left hemisphere function in most people and for many occupations, a high verbal ability, written or oral, is not necessary. If they can get that far, these people, who seem to rely on the right hemisphere more than do we verbal teachers, go into fields where spatial abilities are required such as in engineering, and surgery. Verbal abilities are not critical there. But we know that 5 to 10% of our students, even those with high ability, may be presumed to fail in those first few years of higher education.

Let us make certain that because we care enough to look critically at all aspects of our students' learning, we no longer contribute to that failure.

Thank you.

References

- Johnson, D. and Myklebust, H. Learning disabilities: educational Principles and Practices. New York: Grune and Stratton, 1967.
- Pysh, Margaret Van Dusen and Chalfant, James C. Learning Disabilities Manual: Recommended Procedures and Practices. State Board of Education/Illinois Office of Education. May, 1978.
- Zirbes, L. "Why Write," in C. Carr (ed.) When Children Write. Washington, D.C.: Association for Childhood Education International, 1955, 2-15.

TECHNICAL WRITING AND TECHNICAL COMMUNICATION

William F. Funderburk
Society for Technical Communication

I am one of those individuals who went to school to become an engineer and ended up getting into technical writing. Following World War II, I entered school with the thought of becoming an engineer in the emerging field of television. While in school, I displayed an aptitude for writing understandable technical reports. My instructor thought so. He would read portions of my reports to the class as an example of how to clearly explain items covered by the report.

When I graduated, I had an opportunity to go to work with Emerson Electric as a technical writer to help write equipment manuals for electronic equipment being produced by the company at the time. My objective was to take the technical writing job until jobs opened in television engineering. I have worked at Emerson ever since. During that time I have advanced through the various levels of technical writing and supervision to Supervisor of Technical Publications with a staff of about 75 technical writers, editors, illustrators, artist, graphics and production personnel.

Now for the next few minutes, I will speak with you about:

1. Technical Writing and Technical Communication.
2. Technical Writing at Emerson Electric.
3. Some thoughts on how Technical Communicators can be better prepared for jobs in industry, and
4. The Society for Technical Communication, commonly referred to as STC.

I will conclude by showing you a few slides of STC functions and organization.

Technical Writing and Technical Communication

Technical writing has evolved from a craft that was concerned primarily with technical manuals to a profession that includes such a wide variety of writing that scientific or technical articles intended for a mass audience are also properly called technical writing. However, all these written products have one thing in common. They are user-oriented documents which endow and inform the reader. The content is as factual and complete as the writer can make it. And it will be accompanied by illustrations that reinforce and supplement the text. Therefore, a technical writer is a versatile person who is at home with a wide variety of documents, familiar with pictorial material and knowledgeable about the other components of his profession including printing and photography. Other skills the writer will acquire are management of publications, knowledge of composition equipment, engineering or the technology of his industry, and much more.

Further, the writer may send the message in a variety of written formats to suit the needs of the user. He may write or edit a management or engineering report, aid engineering in the development of a manual using this same information, assist marketing in developing sales brochures, help develop a proposal or proposals after an analyses of the request for bid, write, or edit follow up reports for management, or aid research in progress reports. The list is lengthy, but I am sure you get the idea.

Technical communication is a term used in deference to our increasingly more visually oriented society. Since technical communication is educational in nature, the electronics media will be used in many instances to convey technical information more appropriately than the printed page. The Society for Technical Communication now sponsors international competition for visual, non-print media. Obviously, the content of this communication is technical to some degree. That is perhaps the only delimiting factor.

Now, the writer's role is expanding from the printed page to the spoken word, the computer print-out, the CRT display and whatever else the future holds. Technical writing demands more discipline on a line-by-line, word-by-word level than any other form of writing. The skilled technical writer can write tight, concise copy with more impact than his equivalent in any other facet of writing. It is an excellent place to learn the art of writing.

Technical Writing at Emerson Electric

At Emerson, where I work, practically every equipment hardware program includes various software/data requirements as part of the deliverable end product. These data requirements entail a wide range of technical documentation such as the basic blueprint (drawings) package, spares and provisioning documents, technical specifications, reports, and technical manuals.

The usefulness and adequacy of a technical manual results directly from the communication skills of the technical writer assigned to develop and write the manual.

Our technical writers draw upon a wide variety of experiences and backgrounds in diverse phases of engineering. These areas include computer technology, electronics, mechanics, hydraulics, pneumatics, propulsion, and more. Many are graduate engineers while others are veteran maintenance experts with years of commercial or military experience in such specialized fields as radar, avionics, and automated testing. In addition to their mix of primarily technical competences, the technical writers possess other important skills and training in business administration, journalism, technical and commercial art, printing, grammar, foreign languages, literature, and accounting. These diverse areas of experience may be brought to bear on the design of technical manuals to augment the technical writers' technical expertise. Our technical writer needs a solid technical background and the tangential specialties because he must be able to develop procedures and instructional materials from drawings, equipment, consultation

with design engineers, and documentary research. His methods are similar to those of the design engineer and involve research, data gatherings and management, procedure verification, and validation to ensure that his manual will perform as intended. The technical writer's background and engineering skill enable him to develop material through study and through operating the equipment. He verifies and validates the procedures he has written by working closely with design and production engineers at Emerson and with customer personnel.

Our technical writer's primary skill is communication. He must convey his ideas to many people during the development of his manual and he must understand what engineers, project managers, supervisors, instructors, illustrators, and laboratory technicians are telling him about the equipment and the progress of the project. Then he must translate complex equipment specifications and engineering documentation into easily understood, usable information so that less experienced technical personnel can operate and maintain the equipment correctly.

Preparing Technical Communicators for Jobs in Industry

As our technology continues to advance, we realize that the job of preparing technical communicators for jobs in industry becomes increasingly difficult. Nevertheless, here are some ideas that may be helpful.

Educators can better prepare their students for jobs in industry if they actively seek the advice and counsel of people from industry. Working together, they can study the needs of industry and plan courses and programs that help to meet these needs. The local STC Chapter recently developed a format for such cooperative effort.

Educators can emphasize the practical by providing hands-on training whenever possible. One way is to train students on the types of equipment and in the types of jobs they will encounter in industry. If the school cannot provide the equipment because of cost, they can make working arrangements with corporations that possess the necessary equipment.

Probably the best method is to establish special programs under which students work in their chosen fields during the summer vacation. Another good method is to include plant tours, workshops, and lectures as part of courses in technical communication.

When equipment is used for hands-on training in a school or in industry, we must always be sure that it represents the state-of-the-art. The use of computerized graphics and other automated techniques, for example, should be included in any curriculum for technical communicators whether they are writers, editors, artists, or production specialists.

Using the literature of the student's chosen field may provide the motivation and opportunity for independent study.

Educators can turn their students into more effective communicators not only by training them in their selected areas of interest, but also by demonstrating how their work will fit into the overall operation of a technical communications department. A writer, for example, must know what type of artwork he should ask for and not ask for. An artist must understand what will happen to the legibility of his drawing if it is reduced too much in printing. Everyone in the field must understand both the capabilities and limitations of all other steps in the process.

I've suggested that educators train technical communicators who will meet the needs of industry. At the same time educators will be providing programs and courses that meet the needs of the students.

One good way is to maintain a continuing contact with former students. In this way the educators can learn what helped students the most, what additional training they should have received while in school, and what new training they would need in today's world.

The student will also benefit if he becomes familiar with the many other activities involved in technical communications. For example, he can be a better writer or a better editor if he understands the capabilities and limitations imposed on the artist, the photographer, and the printer.

In addition, the students should be given options which will allow them to specialize. If they are interested in audiovisual communication, for example, they should be offered elective courses that will give them training in that type of program.

Furthermore, if the student is capable and is interested, he or she should also have available such courses as creative communication, advertising, public relations, and technical journalism.

Courses and programs - and their titles - could be designed to appeal to engineering students or hardware-oriented students. For example, a course originally labelled as "English Composition" might be more attractive to technical students if it were renamed "Engineering Communication".

Students could be encouraged to join professional organizations in their field. I know of no other professional society more appropriate for a technical communicator to join than the Society for Technical Communication.

The Society for Technical Communication

STC is an international organization of communicators with a common goal: the advancement of the theory and practice of technical communication, in all media. STC provides professional development programs to promote and enrich the careers of technical communicators. Our publications, activities, and conferences are carefully designed to benefit members in their daily work.

Who Belongs? STC members are from every discipline within technical communication. They are writers, editors, teachers, publishers, illustrators, film makers, engineers, scientists, designers, marketing specialists, and researchers in information science. Our members see the need to analyze and improve communication techniques and media---and they actively help to expand and extend understanding of technical information.

Each chapter sponsors meetings generally from September through May. (Chapter committees, of course, may meet year around.) Members participate in panels, interact with authoritative guest speakers, deliver talks on their specialty areas. Some meetings involve interesting field trips to a member's company or installation. The key objective? Membership involvement and growth of the individual communicator.

Regional seminars bring together members from larger geographical areas. Many of these meetings include unusual displays and exhibits of technical art or publications. All this suggests a myriad of ideas for better communication.

Since 1955 , STC has sponsored an annual international technical communication conference. This 3-day meeting is tailored to the needs of professional communications, and it draws hundreds of participants from around the world. The major conference categories deal with communication management, education, graphics, writing, and editing. All members are invited to submit technical papers for presentation--and many do each year.

STC members pay reduced registration fees and reduced prices for STC publications which are always available at the conference and from the Society office. Among these publications are the following two quarterlies, which are included in your membership: Technical Communication, a journal which contains well-prepared articles written in a readable style; and Intercom, a newsletter which keeps members informed of current activities on the chapter, regional, and Society levels.

SATURDAY WORKSHOP: TEACHING TECHNICAL WRITING

Vivienne Hertz

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In the Workshop on the Teaching of Technical Writing, Bill Collins spoke of the teacher's role in helping students make writing choices, thus letting them know their options. Teaching then is tactics, helping students do the right things--not think the right things. The teacher's role is to present the information in useful ways; the student's is to share the responsibility for the learning that takes place. Be sure to read the three exercises that Bill shared for our use in the classroom.

John Chillson spoke of the unique problems in the community college because of the diverse goals of the students. Some are engaged in terminal education (or at least they think so at the time) and other are stopping off with plans to continue elsewhere. The one set of students wants just enough of an encounter with the courses to get by; the other expects more sophisticated technical writing instruction. He challenged us to answer the articulation question, "Where does technical writing credit belong, in general studies or as professional education?" Other questions he posed included the dilemma of the technical writing instructor who asks, "Am I doing what industry wants?" and the one he/she asks "How does one face a classroom of twenty-eight students with some twenty-four separate majors and plan assignments to meet the needs of all?"

Christine Horn's presentation described the teacher as an entrepreneur and as an enterprising facilitator of learning. She proposed the intensively scheduled course in technical writing for engineers, then adapted some creative techniques in helping the writing flow from these professionals. She built on Ken McCrorie's concept of "telling writing" to get their writing started. The students wrote quickly, letting the thoughts intermingle, for some 10-15 minutes, non-stop. Similar to priming a pump to get well water, the process is at first forced, then moves freely, gushing at times, providing a steady, even flow at others. The analogy stops there, however, for the writing then invites the next step, revision. The revision exercises become the refinement of the writing and the challenge to the skills of the instructor to help the students become aware of the wide range of editing choices.

Working from a felt need for engineers to communicate, Margaret Somers designed a course that offers much more than writing. The special seminar required for civil, electrical, and mechanical engineering students, sprung from her advice to students to "talk a lot, write a little, and think about communicating." Not only did instruction deal with traditional reports, the syllabus also exposed students to such professional demands as how to be polite to a secretary, how to report to the chairman of the board, and even how to turn on and use IBM dictating equipment. One can see the professional demands of the course when the learning contracts signed by students and the instructor were notarized to reflect that they were entering into a business relationship. But the business stressed students sharing responsibility for learning and a course design that encouraged videotaping and other uses of technology.

A STUDIO METHOD FOR TEACHING TECHNICAL WRITING

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Teaching technical writing requires a judicious mix of lecture, tutoring, and examination (in the classroom discussion sense rather than the testing sense), what Gilbert Highet calls, ". . . three main methods of communicating knowledge from teacher to pupil."¹ The judicious mix normally begins when the teacher prepares the semester plan for the course and when the teacher places a conscious or an unconscious emphasis on one of the three methods. If the teacher sees technical writing as a body of knowledge, emphasis possibly occurs on lecture and examination; if the teacher sees technical writing as a demonstration of skills, emphasis possibly occurs on tutoring and examination. Naturally, one can multiply ifs and emphases.

Most teachers probably agree with Paul Morrill who says, "The plain fact is that writing is learned by writing."² Writing teaches writing. Therefore, who teaches writing? The student. One implication of these remarks is that a writing teacher teaches something other than writing. Probably he or she teaches judgment about how to present knowledge to the student who wishes to share knowledge with others.

An assumption underlying the studio method is that a student can quickly and efficiently learn writing if the teacher occasionally helps the student make rhetorical choices at every stage of the writing process. This assumption places a strong emphasis on both classroom work and the goals of the technical writing course. Whatever the title or level of the courses they teach, writing teachers can probably agree with Donald Cunningham when he says these courses ". . . share one common goal: to teach students how to present information in clear and useful ways to specific audiences."³ The information is usually jargon about scientific, industrial, or technical work activity, and the chosen words must suit specific readers or listeners. Consequently, the teacher stresses specific knowledge and the use of that knowledge during the writing.

Another emphasis also occurs when the teacher decides how to help the student learn to make the choices necessary for presentation to specific readers. Writing a memo to Joe Sackett, the third shift production foreman, about the daily overtime of his cheese packing workers is different from writing a memo to Mr. Harold Lombardo, the Vice President of Finance, about reduction of overtime costs of labor on the third shift production lines in the fourteen company plants. To write this overtime memo, the student has to choose the efficient presentation materials.

The studio method requires that the teacher prepare the writing topic; that he or she share all of the technical situation, or a complete part of it, which produces the need for a message; and that he or she sees the student write the message. More particularly, the method comprises a brief business situation from which all students write a message, an evaluation of each student's report by at least one other student, a discussion of the message with the writer and the student evaluator, a rewrite of the message, and a final evaluation by the teacher and the writer.

I call this method a studio method because the doing of it resembles what goes on in an artist's studio, or for that matter, what goes on in a ballet or music studio. The teacher cooperates with the students who perform a part or the whole of a drawing, dance sequence, or musical form. Technical writing may not aim at aesthetically pleasing results, but it does show them whether or not the technical reader or technical listener recognizes the artistry that went into the finished performance. Technical writing like imaginative artistry also demands that the writer show, individually, a performance that results after the writer has worked alone or with other workers.

At Jefferson, a two-year community college, my technical writing course is Business Communication, a part of the business administration curricula. A lower-level course, it fits Cunningham's definition, ". . . I should like to call this course occupational writing, the writing that links together people in the world of work. . . . Basically, occupational writing consists of correspondence and reports. Because reports often must be made orally, a unit of oral communication is usually included."⁴ He goes on to praise the career-oriented students; however, some of my students are neither practical nor industrious, and some do not want to learn good communication practice. Nevertheless, I ask them to understand and use three concepts: a communication flow chart or model that stresses the reader or listener, the standard business problem solving formula, and a simple inductive or deductive process of preparing and presenting the message to a reader or listener.

My current textbook analyzes these three concepts well, and I chose it because its principles agree with my experiences during many years in industrial management. The text with instruction serves as a good foundation in technical writing for any students who go on to a four-year college or university. And most chapters present problems in a business situation from which the students write letters or reports because these situations help the student learn to make the choices necessary for presentation to specific readers.

My students are freshmen or sophomores who have sometimes studied composition. Sometimes they are businessmen or women who have not attended college. They may be studying for the Associate Degree in Business Administration or Secretarial Science. My students average twenty-seven years old, and they normally work at least part time. Jefferson is a commuter college and decidedly counturban, meaning country and urban, not suburban. The northern half of Jefferson County is urban, the residents working in the St. Louis Metropolitan Area, and the southern half is country with some small towns.

My day class meets for one hour each class period, and the night class meets for two hours and forty minutes excluding a break. Jefferson limits writing classes to twenty students, so time presses during the day session when I use the studio method, and time expands during the night session. When I have selected a writing subject, such as an instructional report whose technical situation requires a complete memo, my classroom evaluation of twenty students takes up to 100 minutes on top of the 20 minutes it takes my swifter writers to complete the writing. This means that the studio method takes up to three class meetings. Usually in a night class of two hours and forty minutes I can complete the method in the last two hours of one class and the first hour of the next class the following week.

Specifically, what is the studio method? In the semester plan of details for the technical writing course, the teacher has previously selected two items: a complete message, let's say an instructional memo, that the student might write on a future job, and the accompanying technical situation from which the student will write the brief memo. In a previous class session the teacher has told the students how to use the business problem solving formula and how to set up and write an instructional report. In the studio meeting the teacher gives each student an individual copy of the technical situation, and each student writes a message using the same situation. This is not a test. Each student can use the textbook, notes, the teacher, another student, or all four to get help for writing the message. Some students question the details of the technical situation. Some ask the teacher's help in the choice of person, the formation of sentences, or the development of paragraphs, and so forth. However, they must make their own decisions and do their own writing. (I usually conduct this portion from among the students, much as an actor performs in a theatre-in-the-round.) When finished, they revise the messages so that the student evaluators, whom they choose, can read clear copy and the handwriting. (They must select a different evaluator each studio session.)

The teacher gives each student a one page evaluation form that the teacher has previously shown them how to use. Each student evaluates, writing on the form and not the memo, while another evaluates his or her memo. When a writer and an evaluator completes a memo, the teacher discusses it with the two students. During the discussion the student writer marks passages of the memo which need rewrite. After this discussion, the teacher asks the student to rewrite the memo. (For the rewriting I usually schedule an office hour in the classroom where I teach the course because many of my students prefer to rewrite and to ask questions in their classroom.) While students are awaiting their teacher discussion, they revise their memos, study the text, or write their next assignment.

Of course, the studio method is after all not an experiment in a laboratory. It is simply a judicious mix of the three main teaching methods. Its emphasis is upon the process of turning knowledge into know-how. Wholesome results reliably occur from the occasional use of this method during the course. Some of my students have told me of practical improvements in their ability to correspond at home, write on

the job, or write reports for other classes. Some of their teachers have told me that certain students have shown better skills at making clear subject matter in other business administration courses. Secretarial science students have reported to me that their bosses have more quickly come to depend upon them for an ability to make a letter better. Some of my students even begin to enjoy technical writing and literature.

Whether or not you can teach technical writing, your students can learn technical writing. I recommend that you develop and occasionally use a studio method. Present the student with ways to write and ask them to write in your presence.

Notes

¹Gilbert Highet, The Art of Teaching (New York: Random House; New York: Alfred A. Knopf, Inc., 1950), p. 87.

²Workshop on the Teaching of Technical Writing, 21-22 Oct. 1977 (Carbondale: Southern Illinois University, 1977), p. 38.

³Cunningham, Workshop, p. 1.

⁴Cunningham, p. 1.

PROBLEMS OF TEACHING TECHNICAL REPORT WRITING
IN
A COMMUNITY COLLEGE

JOHN CHILLSON
KASKASKIA COMMUNITY COLLEGE

Primarily, I am here today to get some answers rather than to give them. Thus, to cover my subject - PROBLEMS OF TEACHING TECHNICAL WRITING IN A COMMUNITY COLLEGE - I am compelled to put these problems into question form and hope that through an interchange of ideas we may arrive at some acceptable solutions.

Classes in technical writing do progress through the semester and I find that I do resolve the problems I encounter one way or another. However, I am not really sure that I am correct in the way I handle the situation. Maybe there is a better way to do things.

Considering that a community college is a rather unique institution compared to traditional educational methods, I think we may be trying to be ALL THINGS TO ALL PEOPLE. Thus, I do not think that my problems at Kaskaskia College are much different from those at any other community college.

In the interest of brevity, I have broken the problems specifically dealing with teaching technical writing in a community college into three areas. The first is a problem of articulation between the community college and the universities. How do we get together and work out mutually acceptable solutions. The second deals with management in vocationally oriented industries. What do they want community college graduates to write? And third is an internal problem common to the community college itself. When a single class of 25 students represent as many as 15 separate and distinct vocational interests, where lies the common technical denominator to promote motivation and maintain interest?

One out of four of our technical writing people are expecting more highly specialized technical writing instruction. I found that these people had not been told or did not realize that technical writing at the two-year level did not transfer to technical writing as juniors or seniors. Because it transferred as an elective, they thought it would transfer as a required course.

Maybe the problem here lies with inadequate orientation into higher education, and maybe it lies with ineffective counseling. I am not suggesting that freshman or sophomore courses should transfer full credit to a specialized university program. However, there should be some preliminary preparation that we can give our students that would set the stage for more highly specialized instruction at the university. We need, at least, to talk about it.

At this technical writing conference last year, I asked the question, "What do the universities want our people to know about technical writing when they come to the university?" The answer was simply, "Mechanics!"

Our problem here is that we are forced to go beyond simple mechanics and basic English because of administrative problems, plain economics, and student expectations. Should we try to sort out our potential four-year people? Or can we offer them something extra as well as beneficial to both the community college and the university?

The next problem deals with the other 75% - and again I assume that Kaskaskia is rather typical. Considering the 15% to 25% span of baccalaureate-oriented students, it would be safe to say that most community college students are vocationally oriented rather than academically-oriented. Granted, however, some community colleges are "feeder-colleges" for a university and maybe they attract a different type of student. Nevertheless, they still function under the basic community college concept.

At Kaskaskia College, we offer 18 separate two-year Associate and Applied Science degree programs, and 8 one-year certified programs. These include such areas as data processing, dental assisting, welding, electronics, child-care, police science, mining technology as well as others. Degree requirements vary for each.

I think I should pose the question here to that area of business and industry who hires these people. What do you want our people to know about technical writing when they come to you? What kinds of technical writing will these people be expected to do?

As a community college teacher facing these problems, I have tried to personally contact representative businesses from each area to learn first-hand answers to these questions. I have met with little response. However, this is really about all I have to go on - and it is basically these findings that I have used to structure and organize the content of my technical writing classes.

My question - or problem - here is, am I right? Is emphasis properly placed? Have I included everything that is necessary? What does industry want? What do other technical writing instructors have in their class outlines that I do not?

The third problem - and probably the most frustrating one I encounter in a two-year community college - is facing a classroom of 28 students representing 24 separate vocational and technical areas of interest. The question here should be directed to technical writing instructors. How does one maintain some semblance of interest among a group of welders, police, data processors, and miners; while discussing the articulation of electronics vocabulary with potential electronics engineers? Is there an answer to this problem?

I try to put myself in the student's place. If I took a class titled Technical Report Writing, I would expect just that. I would know that TECHNICAL means "marked by specialization" and I would expect my special interest to be covered.

From the instructor's standpoint, however, how does one cover 24 special interests in a 50-minute period - or even in 45 class periods? Is there a common ground unique to all technical writing that would warrant time and effort for an entire semester for such a mixed group?

I think there is definitely a relationship among all three of these areas which I have outlined, but I probably have not told you anything that you did not already know. I think that the best interests of my students can best be served by asking for your comments. How do you solve these problems?

FREE WRITING FOR ENGINEERS

Christine D. Horn
Training & Development Officer
Credit Union Central of Manitoba

From January to March, 1978, I taught an eight-week course entitled "Effective Technical Reports" through the University of Manitoba's Continuing Education division. The course was geared to professional engineers and engineering technicians in the area, and this was my first experience teaching professionals. The students ranged in specialization from Agricultural to Mechanical and Civil Engineering.

A portion of the first class session involved writing a brief one-to-two page essay or report on a topic on which they were currently working. The students had one hour in which to write.

THE PROBLEM:

As I read over their papers, I began to realize that the writers of technical writing textbooks were right in including a section on technical writing style. I assumed (prematurely) that my students could write -- after all, they were professionals. But, the more I read of their writing, the more it all seemed to be alike. The variety of subjects written on, to my surprise, were all expressed in the same monotonous, stilted language. I could not believe these papers were written by real, living people, let alone professional engineers. The class of twenty, which varied in age, education, and professional status, all wrote in the same engineering jargon. The prospect of reading more reports from my students in this style was disheartening. I felt that I needed to awaken them to themselves, to try to make each of them aware of his/her uniqueness.

When I decided to undertake this task and presented them with a methodology, I was confronted with yet another problem: engineers are hesitant to change. They wanted to write better but were unwilling to participate beyond a certain point. What I was suggesting was much too radical for my conservative engineers.

THE PROCEDURE:

If you plan to use this method, follow these directions:

1. Without explaining what you are doing, ask your students to take out a couple of sheets of paper. Appear mysterious -- they are willing to follow your lead.
2. As calmly and as professionally as you can, say, "Think of some technical activity that you are currently working on which

will eventually lead to a written report." (Pause, give them time to think.) "What I want you to do is write about this subject. Write as quickly as you can. Don't stop moving your pen across the page. You can think faster than you can write. Try to keep up with your thoughts. Don't go back to correct anything. Keep the written movement in a forward direction. Don't go back to cross your t's or dot your i's. Let the ideas flow from your brain across your shoulders, down your arm, into your fingers, onto the pen and onto the page. Keep writing as quickly as you can. This exercise will be timed, so continue until I say stop."

3. Don't disturb their thoughts by talking! Let the students write for at least ten minutes. They should be able to fill at least two sides of a page in writing.

4. If some are not writing, tell them to keep writing even if they have to repeat the last word they have written until they find something to write. Usually they stop writing to think of the correct word or to organize their thoughts. Don't give them a chance to do this!

5. At the end of ten minutes say, "Stop".

6. Collect the papers. (They are fascinating reading.)

7. Explain the purpose of the exercise. Engineers are so concerned about writing a perfect draft the first time that they hesitate and refuse to write until it is perfectly clear in their minds. This means that they tend to write very little. Sometimes ideas don't become clear in one's mind until writing begins. After a few drafts and much agony, a writer may have achieved a mediocre report and submit it for final typing. Some students -- and engineers are no exception -- are quite lucid in speech but awkward in writing. Teachers who confront students with awkwardly-worded sentences and ask for explanations find the verbal interpretations of sentences much clearer than the written ones. When asked why they didn't write a sentence the way they said it, students reply that they didn't think that what they said verbally was acceptable in written form. Students somehow have internalized a rule which states that anything which appears awkward to them must be good writing.

It should be stressed that this technique is to be used as a starting point. The Free Writing exercise provides a basis or a first draft; it is not the final draft.

8. This procedure should be repeated at the beginning of any long-term class in technical writing. It can be used as a method for eliciting the first draft of a student's research paper. For example, a student who would like to write on the city's water purification system could research one step, come to class, and write for ten minutes on that step -- stopping when the topic is completed. From this beginning students could expand, add and subtract, and rewrite ideas until they have fully developed the thesis.

THE RESULTS:

After the initial moaning and groaning from students complaining of sore hands, you will hear some say that they have never written so much in such a short period of time.

In my class there were three distinct groups which emerged from this exercise: One group of engineers (5) who were loose enough to write as they spoke did very well in the exercise. Their ideas poured out of them in a clear, coherent manner. A second group (7) who exhibited some difficulty writing the first-session report were able to let their thoughts flow in this exercise even though their ideas were a little disorganized. The third group (5) who exhibited great difficulty in communicating their ideas in the first-session report were unable to loosen up in the Free Writing exercise. Their thoughts were expressed in the same engineering jargon. (Three were absent on the day this exercise was done.) See the chart below for a quick summary comparison among the groups.

Engineers	First-Session Report	Free-Writing Exercise
Group 1 (5)	well-organized clear coherent	well-organized flowing thoughts
Group 2 (7)	somewhat organized not clear poor style	somewhat organized flowing thoughts
Group 3 (5)	heavy engineering jargon poor style	heavy engineering jargon poor style

Many engineers in the second group were amenable to this procedure because they were accustomed to speaking into a dictaphone to record their thoughts. They were able to speak freely into a dictaphone but were inhibited when faced with a blank sheet of paper and a pen. The Free Writing exercise proved to them that they could write their thoughts down easily on paper and have them natural and flowing.

Members of the third group were too immersed in their technical jargon to be able to profit from this one-time exercise. They admitted that the assignment was good, but they had trouble writing freely because they were confined by their own expectations of good writing and their technical language. In time, however, I believe even these students would be able to express themselves freely in the Free Writing exercise. They just need a few more opportunities.

CONCLUSION:

The Free Writing exercise has value. It is a good beginning for those who are inhibited in writing; it allows them to express themselves freely in the beginning. But this exercise is only a first step in the long journey toward writing a good report.

After the engineer has outlined the major areas of discussion and has, through the Free Writing method, expressed all the initial thoughts on the subject, then the writer must step back and objectively view the result. She/he should accept the fact that this is a primary stage and that the ideas may have been written either poorly or effectively. What the writer needs to do from this stage is to screen the well-said sentences from the poor ones. In this process there may be the discovery that one idea may lead to another which requires further development. This is a dynamic, creative process. The engineer must be objective enough about her/his own work so that clarification of expression can be made in order to achieve effective communication with others.

Teachers of technical writing are always looking for new, interesting, educational, and exciting ways of teaching. But we are faced, in the engineering field at least, with some rather outdated notions of how good writing is to be achieved. Ken Macrorie would agree that the "uptaught" engineers unfortunately have inherited an engineering "Engfish" or a "bloated, pretentious language". The Free Writing exercise with repeated use can help alleviate this distractive element in technical communication.

"ENGINEERING COMMUNICATION: OPPORTUNITY AND CHALLENGE"

Dr. Margaret Somers

University of Kentucky, College of Engineering

I should like to share with you today the communication curriculum I have developed for the College of Engineering at the University of Kentucky. But first, perhaps you'd be interested in knowing all the other classes and activities that I work with and am engaged in at the College. I team-teach, with a graduate student engineer (from Egypt), an introductory course in engineering methods for mechanical engineers. He teaches the laboratory techniques and I teach the reporting techniques. I also teach a business and technical writing course, especially designed for engineers, for UK's Department of English. And, I teach a technical presentation course for seniors in electrical engineering. This may sound like many hats to wear in any busy week, but never is my most becoming hat so happily in place as when I teach Special Senior Seminar-- "Engineering Communication: Opportunity and Challenge". It is that seminar's activities that I want to share with you today.

As you can see from the folders that I made available during our open meeting (NOTE: folders are available from the author upon request) last night, the special seminar goes far beyond the traditional technical writing or formal presentation course. I have tried to design into this curriculum all the immediate communication skills that a new engineer, a new person in the business world, will need to know and know well.

I have included such unexpected topics as secret document control; drafting techniques, in relation to report requirements; and even printing processes. But one of the most rewarding and amusing activities we have shared in special seminar has been voice development exercises.

I became interested in these exercises when I learned them at Monash University, Melbourne. I had always had a "Southern Lady's" voice, carefully attuned to genteel agreement with any handsome man who happened to be opening a door for me. This voice wasn't very effective in the often aggressive world of editing for operations research. When I had the opportunity, during my brief stay in Australia, to take voice development lessons, I jumped at the chance. Now, as you can hear, and see, my voice and face are flexible enough to communicate my ideas and emotions clearly.

I am very concerned that both my women and men engineering students develop this same strength, so I offer these exercises that I will show you now. (NOTE: For complete voice and facial exercises demonstrated at the conference, see Woelfe, Robert M. (ed.), A Guide for Better Technical Presentations, IEEE Press, 1975, pp. 128-142.)

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Exhausting, aren't they? But fun and amazingly effective. I have one student who does all of these, and more, as part of her special contract, and she has already begun to lose her simper, and her disapproving pucker, as well. Some of you may not know what a disapproving pucker

is, but one often sees it in women who are in fields that are traditionally masculine. I used to have it, not because I was in engineering but because my mother taught me to be constantly alert to stolen kisses. What she never made clear was whether I was to be alert to reject or accept them! Thus the disapproving look.

Mention of the special contract that includes, for one person, the voice exercises, brings me to the key to the special seminar's curricular design: the contract method of teaching and learning. (Sample contracts are in your folder.) You will notice we have the big three of traditional technical communications curricula: writing, speaking and reading. The self chosen grade and the individually directed choice of activities within these three activities are the carburetor that makes this course fire the students to an enthusiasm and commitment I have never seen before in my teaching career.

Special Seminar serves civil, electrical and mechanical engineers and meets a one-hour graduation requirement for seniors. I have twenty-one students this semester and expect about that many in the spring. Of my twenty-one fledglings, 18 elected for A's and three for B's. It may seem surprising that I had any takers for a B grade, but as one man explained, "My grade point is only a 3.75 and I'd rather put my effort into technical work while still getting something useful out of this class--without all the worry". Only a 3.75! I had to scratch for my proudly won 3.3; but engineers are like that. Bright, ambitious and unmercifully disciplined to do their best on what seems important to them.

The special seminar is important to each of its students; the A students have merely contracted to do a larger quantity of work than a B student, not a lesser quality. Let's look at Ms. Buchanan's contract.

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As you can see, she is planning to write an article for a major civil engineering journal. Her research is based on a concrete stress-design project in one of her CE courses. She chose this writing exercise, which most of you will agree is an arduous one for a one-hour course, because she feels someday she may want to take an advanced degree and perhaps teach. As you can see, she is also serving on the class's panel on ethics and the engineer's role in American society.

While you mentally chew on the idea of contract teaching, let me digress to the panel's activities for a moment. Those of you who are familiar with most engineering curricula know that engineers are allowed little time for reflection or examination of the larger issues of how their training and abilities might influence our society and, indeed, world events. They are rarely encouraged to be philosophers. Our panel on ethics, which had its first meeting last Thursday (so I'm still dazzled by what happened), gave the four panel members and the seminar group just that chance. After reading, chinking, and arguing about the question of an engineer's responsibility to himself, the profession and the society, each panel member made a position statement. The seminar audience then offered a collective "Yes, but ..."

The hour that the panel members defended, defined and elaborated their positions was the most exhilarating of my teaching career. There was a crackle of intellectual involvement and the sensual urge of emotional commitment in the air. We each thought, learned and grew--personally and professionally. And that was just one special seminar class. We do other things, as well.

An important activity, and one that will be immediately useful to a young engineer is our "weekly report" session. This session, held in a college executive committee room around a big table, flanked by fat chairs, is a role playing activity. Led by alternating seminar members who have identified management goals, the meeting is a series of three-to-five minute reports by each member on an actual project--road construction, gear design, circuit analysis--that is underway in their experience or that happened in their past work experience. The major goal of the sessions is to learn to speak informally while remaining organized and business-like. A part of this goal is to learn to report negative results without child-like apologies or retreats from responsibilities.

Interaction among the three branches of engineering represented is a fascinating by-product of these sessions. The electrical engineers are learning that there are content and creativity in civil and mechanical engineering; the mechanical engineers are discovering that they can follow and ask questions about difficult electrical engineering designs; and the civil engineers, along with everyone else, are discovering how to ask questions and admit a lack of vocabulary or concept experience. It's exhilarating to watch the field of engineering coalesce from its often fragmented or compartmentalized specialties.

It's not all fun, as you might have guessed. The special seminar curriculum is a great deal of work to teach and it was a great deal of work to prepare. In fact, it was 2,000 pages of reading each week all summer; then two (2) solid weeks of contract negotiating with students; then a constant scheduling burden including TV technicians, guest lecturers, special facilities and even uninvited visitors from other faculties.

These activities are time, emotion and intellect consuming. There were times in the preparation period, and there are still times, when I wonder if this much expenditure is worth the gain. And then I think of all the years it took me to learn alone, painfully at worst, or at best, embarrassedly, what we are all studying and becoming aware of together; then I know the bother is worth it and more.

The more, in this case, is a longitudinal study that will proceed during the next five years. Using telephone interviews and questionnaires, I shall stay in contact with these students, and, where possible, their employers, to attempt to assess the impact of the course on their careers, self fulfillment and communication abilities. The details of this part of the curriculum are sketchy and I shall look forward to presenting them to yet another of these stimulating annual conferences.

For now, I can only share my joy, enthusiasm and reward in being able to enter the lives of the special seminar students, to share with

them what I've studied and experienced so that they can become more adept, confident communicators of the precious knowledge that engineering holds for the world.

It's not easy; but it's fun. I can't recommend it for everyone. But, if you dare, try it. I did and before this I didn't even have naturally curly hair!

SATURDAY WORKSHOP: RELATIONS WITH INDUSTRY

Paul H. Morrill
Professor, Department of Higher Education

The section devoted to industry was full of interesting insights. I suppose, as an "old hand" who has crossed over and back from academe to business, the right tone was struck with Don Bush's title: "Will the Real Technical Writer Please Stand Up?" Who is that? Is the best technical writer the person who has the fullest knowledge of the field? Yes, but, what if this person doesn't know how to write, or worse, doesn't know he or she doesn't know. On the other hand, is the best technical writer the person well drilled in the writing role? Yes, but what if this person falls short in knowledge of the field? It's a beautiful "chicken-egg syndrome"--which is not ever going to be answered simply, easily, or satisfactorily.

Then came Dave Bloomstrand with an interesting report on trying to determine who best succeeds as a technical writer in industry. Or to reverse this: "How can academe discover the needs of industry in technical writing?" In the case of Bloomstrand's college curriculum in technical writing (at Rock Valley College), he found that industry was invaluable in setting his sights and in forging insights for the entire course. (There's a fine play of words!)

Finally, Victor Barnard laid the problem open even more clearly by showing what one industry (Sundstrand) looks for, needs, hopes for, and demands. This part is too good not to read in its entirety. So I'll end this. Now you can do so.

WILL THE REAL TECHNICAL WRITING PLEASE STAND UP?

Don Bush

Technical Editor, McDonnell Douglas Corporation, St. Louis

As a discussion leader for the conference, I was graciously asked by Vivienne Hertz to "report on my role" in the Saturday morning session on Technical Writing, Business and Industry. My "role" was more of a walk-on part -- a cameo. But I am indeed pleased to review what I learned from the discussion.

Primarily, I learned that Technical Writing teaching exists on many levels. Dave Bloomstrand, Rock Valley Community College, has developed an entire curriculum designed to equip students to go to work in industry as Technical Writers. On the other hand, I'm told repeatedly that Technical Writing courses must be conducted at a very low level -- with minimal substance and content -- because of the low capability and motivation of the students.

Will the real Technical Writing please stand up?

It's obvious to me that industry must demand that the people it hires know something, which implies maximum substance and content, both in the classroom lectures and in the Technical Writing textbooks and exercises.

Actually, the question may be moot. Industry's record in hiring trained Technical Writers has not been good. Industry prefers technicians. Saturday morning this was brought out indirectly by Vic Barnard, Sundstrand Corp., Rockford, Illinois, who is a military retiree, and more directly by Arlen Krabbenhoft, McDonnell Douglas, St. Louis, who stepped into his Technical Writing job because he was an artist and a licensed pilot.

Nevertheless, I assure you that the need for writers is there. Industrial Technical Writing is generally very bad. Thus, the need is for good writers, smart writers, first class students, who can do things that technologists cannot do, and can also understand what the technologists are talking about.

This also implies that college courses should emphasize advanced writing, rather than "familiarization" courses in making slides, T-slotting, page numbering, or the proper use of the folding bone. The latter skills can be taught quickly on the job -- if college people are really required for such chores at all.

What if the technologists doing the hiring don't know that they need writing help?

For the Technical Writing teacher, this is a Catch 22 (to use a literary "technical term"). And it is one more reason that I am enthusiastic about conferences like this. They develop interest in Technical Writing. For industry, they call attention to faults and means of improvement. For the teacher, they open the gate to the Technical Writing jungle and let

him glimpse what's needed inside (perhaps before he shudderingly slams it shut again).

Industry desperately needs to be more interested in its own Technical Writing. This includes the "other" Technical Writing -- basic communication for mechanics, dental assistants, nurses, engineers, and scientists. (Perhaps there are actually four or five levels of Technical Writing, not two.)

But, no matter what the level, if industry is to be helped, standards of instruction must be kept high. The grim alternative is for new employees to learn their Technical Writing from the technologists, which can lead only to further inbreeding and perpetuation of today's bad Technical Writing habits.

WHAT INDUSTRY LOOKS FOR IN THE TECHNICAL WRITER

Dave Bloomstrand
Rock Valley College, Rockford, IL

John A. Walter, in Education for Technical Writers, suggests a major task confronting teachers of technical writing: to find out what kind of people succeed in technical writing, and to translate these findings into a program which will produce these people. At Rock Valley College, we have been very fortunate to be able to work closely with industry, and in particular Sundstrand Corporation, as we are developing our associate degree and certificate programs in technical writing. Since I represent the college program rather than industry, my remarks will concern "how the college can find out what industry is looking for."

Our program was developed through the joint efforts of the college and local industry. The Technical Writing Advisory Committee began by undertaking a survey to establish employment potential in our college district and to determine the specific work responsibilities and skills needed in technical writing. From this survey, the original technical writing curriculum was developed, and we attempted to translate the specifics of our survey into course content. We found, incidentally, that there was much more technical writing being done in our district than there were technical writers to account for it. A number of firms we surveyed were producing technical writing without identifying it as such, and the writing was produced by personnel with training and major responsibility in other areas than technical writing. The college survey, I believe, helped some of the firms to more carefully define their own technical writing needs and practices.

The advisory committee also addressed itself to the matter of preparing technical writers in both communications skills and a "technical major." Industry efforts to hire technical writers were revealing two types of people--those with technical expertise and no training in writing, and the English or journalism major with no technical background. Our program reflects three areas of preparation, each of approximately twenty semester hours: general requirements, communications and technical writing, and a technical concentration such as electronics, data processing, or machine design. We are now re-evaluating and revising the curriculum to some extent; the mathematics requirement will likely be changed, and a blueprint reading course will be an added requirement in some of the technical subject areas.

Rock Valley College has found its own technical writing students an excellent source for finding out what industry needs. Many of our students were already employed in industry, and some were in fact technical writers who lacked formal training but had a great deal of "street experience." These students are not only valuable for their insights and concerns about technical writing, but serve as excellent recruiters among their co-workers. These students understand the meaning of job or assignment deadlines, the responsibility for setting priorities, and the concern for organization and detail. Some of these

students were already technical specialists who sought help in particular areas of writing. From these students, I have also found a limitation in most of the technical writing textbooks. The texts concentrate on problems of communication for the most part. There is little offered concerning the problems regarding technical information--the need for technical writers to collect and interpret data.

Our internship course is probably our best means of keeping in close touch with industry. For students who have no previous technical writing experience, the internship provides the reality of writing about a specific product or service, and it is here that the student faces the reality of his career decision. The conferences with the intern, supervisor, and college faculty provide feedback and program evaluation.

Most important in technical writing programs is the working relationship between industry and the college. I was able to work as a technical writer for Sundstrand Corporation this past summer, and there is no type of preparation I could more strongly recommend for teachers of technical writing. I have obtained from industry many sample publications and writing projects, and a number of technical writers have expressed a willingness to speak to classes. During the spring semester, I will be on sabbatical leave to further study the writing needs and practices in industry. There is a great deal which is not in the technical writing textbook--I found no sample writing assignment or model which at all resembled the types of writing projects I faced in industry. It is most important that college teachers of technical writing get beyond the texts and "hear it from someone else," the technical writers and the employers of technical writers, in this case.

At this point, I think it is clear that industry has provided a considerable amount of help in getting the Rock Valley College program started, and these are some of the ways in which the college instructor can begin to understand what industry is looking for in the technical writer.

Can the college program provide the technical writer industry needs? It is difficult to provide technical writing preparation to suit the range of work situations, product specialization, and specific formats which exist in technical writing. I don't think colleges can compete with the in-house technical writing course which offers specialized training for a group of employees, but we can provide the combination of general preparation in technical writing and an area of technical specialization. In this regard, industry in our district has been very willing to take the time to tell the college of its needs and provide support for our program.

WHAT INDUSTRY LOOKS FOR IN THE TECHNICAL WRITER

Victor R. Barnard
Training Administrator for Technical Publications
Sundstrand Corporation, Rockford, IL

Technical Writers We Look For

Our brochure, SUNDSTRAND TECHNICAL PUBLICATIONS OPPORTUNITIES, puts technical writer qualifications into "must-have" and "would-like-to-have" groups.

PREREQUISITES: Demonstrated command of writing skills, In-depth knowledge in a technical field, and Desire to communicate.

OPTIONAL: College degree in a technical field or in communications, vocational or military training in a mechanical or electrical skill, Elective membership in a technical or communication society, and hobbies and interests in job related areas.

In addition to the "must-have" and "would-like-to-have" qualifications we look for experience. Our technical writer recruiting and advertising efforts emphasize experience. We hire experienced technical writers whenever we can.

Some Technical Writers We Hired

MTU grad, tech. comm. major with some math/science/technology courses, short-term and part-time employment in various areas, 3-month internship in technical writing.

SIU grad, botany major and forestry minor, 10 years experience with another firm (7 years machine operator/assembler/tooling specialist and 3 years in technical writing).

Purdue grad, recreation major with associate degrees in aviation technology and flying.

U Wisconsin/Stout grad, electronic technology major, some writing courses, builds/repairs/drives race cars.

WIU grad, journalism major, German/French minors, some math/science courses, worked summers in Europe for language proficiency, student member Society for Technical Communication and Aerospace Writers Association.

Northwestern grad, business administration major and marketing minor, purchasing/product control/after-market support documentation experience with other firms.

Rockford College grad (cum laude and Phi Beta Kappa), English major, 1 year experience in our firm as a proposals editor.

Wartburg College grad, psychology and sociology major, aviation mechanic training and experience in Norwegian Air Force, flight training and experience in USAF, licensed and experienced commercial pilot.

Purdue grad, English major with courses in aviation technology, diesel engine mechanic with hands-on work experience.

U Illinois grad, electrical engineering major, 2 years manufacturing engineering experience with another firm.

Job-Ready Technical Writers

We like transcripts that show a candidate writer has learned blueprint reading, expository writing, and the basics of science and technology. We are pleased when resumes and data sheets tell about work experiences in industry and the armed forces. We want to see applications that boldly say: Technical Writing Internship, 6/9/12 weeks, with Industry X in Heartland, USA.

Industry needs more well-qualified technical writers. Universities, 4- and 2-year colleges, and the technical schools can become direct sources for the writers we need. Industry can and will help.

PARTICIPANTS: CONFERENCE ON
TECHNICAL WRITING, 1978

CANADA

CREDIT UNION CENTRAL OF MANITOBA

Christine D. Horn, Training and Development Officer, Winnipeg, Manitoba

ILLINOIS

BRADLEY UNIVERSITY (Peoria, 61625)

Mildred C. Caldwell, Chairperson, Physical Education Department

Josephine A. Pearce, Professor, English Department

CENTRAL Y.M.C.A. COLLEGE (211 West Wacker Dr., 60606)

L. L. Blanton, Assistant Professor, Linguistics

COLLEGE OF LAKE COUNTY (Grays Lake, 60030)

Jim Miles, Instructor, English Department

DEPAUL UNIVERSITY (2323 N. Seminary, Chicago, 60614)

Lavon Rosco, Associate Professor, English Department

ILLINOIS INSTITUTE OF TECHNOLOGY (Chicago, 60616)

M. J. V. Blanton, Assistant Professor, Linguistics

INSTITUTE OF GAS TECHNOLOGY (Chicago, 60616)

Mary Moulton, Assistant Technical Editor

(3554 S. Pauline, Chicago, 60609)

KASKASKIA COLLEGE (Centralia, 62801)

John Chillson, Language Arts Department

KISHWAUKEE COLLEGE (Malta, 60150)

Betsy P. Harfst, Chairman, Communications Division

Ernest D. Harfst, Chairman, Industrial Technology and Public Serv. Division

PRAIRIE STATE COLLEGE (Chicago Heights, 60411)

Jan Wilson, Instructor, Tech Writing

ROCK VALLEY COLLEGE (Rockford, 61101)

Dave Bloomstrand, Supervisor, Technical Writing Program

SOUTHERN ILLINOIS UNIVERSITY (Carbondale, 62901)

Academic Affairs

Frank E. Horton, Vice-President of SIU-C for Academic Affairs and Research

Center for English as a Second Language

Becky G. Snow, Writing Coordinator

College of Business

David N. Bateman, Associate Professor, Administrative Sciences

ILLINOIS (continued)

College of Education

Barbara Cardoni, Assistant Professor, Special Education
Paul Morrill, Professor, Higher Education

College of Liberal Arts

Linguistics Department

Beverly Konneker, Assistant Professor

English Department

David Attmore, Graduate Assistant
J. Bevin Crowdian, Visiting Assistant Professor
William T. Dowden, Jr., Graduate Assistant
David Ghogomue, Graduate Assistant
James Grove, Graduate Assistant
Linda Kelly, Graduate Assistant
David M. Kvernes, Assistant Professor
John J. Miller, Graduate Assistant
Dan Piper, Professor, Director of Technical Writing Courses
Douglas Rose, Graduate Assistant
George W. Thompson, Graduate Assistant
Roy K. Weskinskey, Director, Undergraduate Composition

School of Technical Careers

Eleanor Bushee, Associate Dean
Vivienne Hertz, Assistant Professor, Baccalaureate Studies
Ellen Marxer, Assistant Professor, Electronic Data Processing

Vivarium

William R. Voss, Director

SOUTHERN ILLINOIS UNIVERSITY (Edwardsville)

George H. Soule, Jr., Assistant Professor, Department of English

SUNDSTRAND CORPORATION (4747 Harrison Ave., Rockford, IL 61101)

Victor Barnard, Director, College Relations

UNIVERSITY OF ILLINOIS (Champaign, 61820)

Kitty Locker, Assistant Professor, Division of Business and
Technical Writing

INDIANA

BUTLER UNIVERSITY (Indianapolis, 46208)

Jana Bradley, Lecturer

INDIANA VOCATIONAL TECHNICAL COLLEGE (Terre Haute, 47802)

Ron LaRoche, Instructor, Communications

VINCENNES UNIVERSITY (Vincennes, 47591)

Daniel K. McCann, Assistant Professor, English Department

KENTUCKY

MOREHEAD STATE UNIVERSITY (Morehead, 40351)

Donald H. Cunningham, Professor, Director of Languages and Literature

PADUCAH COMMUNITY COLLEGE (Paducah, 42001)

Jayne Crisp, Instructor, Business Department

UNIVERSITY OF KENTUCKY

Margaret Somers, Visiting Lecturer in Engineering English

WESTERN KENTUCKY UNIVERSITY

Pauline G. Jones, Assistant Professor, English Department

MISSOURI

BASIC INSTITUTE OF TECHNOLOGY (1600 S. Kingshighway, St. Louis, 63110)

Carey Nossa, Instructor

COLUMBIA COLLEGE (Columbia, 65201)

Scott Kellner, Professor, English Department

EMERSON ELECTRIC COMPANY

William Funderburk, Director, Technical Publications;

President, International Society of Technical Communications

MCDONNELL AIRCRAFT COMPANY (St. Louis)

Don Bush, Technical Editor

Arleen L. Krabbenhoft, Senior Technical Data Engineer

Chairman, St. Louis Chapter of Society for Technical Communications

R. M. Sherertz, Systems Programmer Associate

Don Wright, Technical Programmer

RALSTON PURINA COMPANY (St. Louis, 61388)

Tom Bergeron, Technical Writer

SOUTHEASTERN MISSOURI STATE UNIVERSITY (Cape Girardeau, 63701)

Luana Bowzer, Student, English Department

Bill Hopkins, Student, English Department

Dennis Jauch, Instructor, English Department

Tanalyn M. Sebaugh, Student, English Department

ST. LOUIS COMMUNITY COLLEGE AT FOREST PARK (5600 Oakland, St. Louis, 63110)

Mary Ann Cook, Chairman, English Department

Carol Niederlander, Assistant Professor, English Department

ST. LOUIS COMMUNITY COLLEGE AT MERAMEC (11333 Big Bend, Kirkwood, 63122)

Robert C. Boyd, Associate Professor, English Department

Diane Carson, Assistant Professor, English Department

Susan W. McDonald, Associate Professor, English Department

Ronald S. Preuss, Assistant Professor, English Department

Sandra E. Richardson, Associate Professor, English Department

Clyde Tracy, Chairman, English Department

OHIO

SHAWNEE STATE COLLEGE (Portsmouth, 45662)

Nancy Barnett, Assistant Professor

TENNESSEE

NASHVILLE STATE TECHNICAL INSTITUTE (Nashville)

Louis Blecha, Associate Professor, English Department

Sam Gant, Chairman, English Department

Ann McNutte, Assistant Professor, English Department

Barbara Walcott, Assistant Professor, English Department

STATE TECHNICAL INSTITUTE AT KNOXVILLE (P.O. Box 19802, Knoxville, 37919)

John O. Dunn, Assistant Professor, Communications

Annabel Hughes, Assistant Professor, Communications

Doris Ivie, Head, Communications